

CLAIMS

- 1.(canceled)
- 2.(canceled)
- 3.(previously presented) Free radical emulsion polymerization method according to claim 13, wherein said dimer is selected from the group consisting of α -methyl vinyl compounds and α -ethyl vinyl compounds.
- 4.(canceled)
- 5.(previously presented) Free radical emulsion polymerization method according to claim 13, wherein said dimer is selected from the group consisting of dimers or cross-dimers or α -methylstyrene, methyl methacrylate, hydroxy ethylacrylate, benzyl methacrylate, allyl methacrylate, methacrylonitrile, glycidyl methacrylate, methacrylic acid, tert.-butyl methacrylate, isocyanatoethyl methacrylate, meta-isopropenyl- α,α -dimethyl isocyanate (TMI), ω -sulfoxyalkyl methacrylates and alkali salts thereof.
- 6.(canceled)
- 7.(canceled)
- 8.(canceled)
- 9.(canceled)
- 10.(canceled)
- 11.(canceled)
- 12.(canceled)

13.(currently amended) Free radical emulsion polymerization method for forming latex particles of a monomer or monomer mixture in a water-based reaction in the presence of a chain transfer agent and of a surfactant, wherein said surfactant is present in a concentration of at least 0.05%, by weight, versus said monomer to below twice its critical micelle concentration ~~of at least 0.05%, by weight, versus said monomer~~ and that said chain transfer agent is a dimer wherein said latex particle has an average particle size of less than 100 nm.

14.(canceled)

15.(canceled)

16.(previously presented) Free radical emulsion polymerization method according to claim 13, wherein said surfactant is an anionic surfactant, present in a concentration versus said monomer or monomer mixture of from 0.05 up to 5%, by weight.

17.(canceled)

18.(previously presented) Free radical emulsion polymerization method according to claim 16, wherein said dimer is a compound selected from the group consisting of α -methyl vinyl compounds and α -ethyl vinyl compounds.

19.(canceled)

20.(canceled)

21.(previously presented) Free radical emulsion polymerization method according to claim 16, wherein said dimer is a compound selected from the group consisting of dimers or cross-dimers or α -methylstyrene, methyl methacrylate, hydroxy ethylacrylate, benzyl methacrylate, allyl methacrylate, methacrylonitrile, glycidyl methacrylate, methacrylic acid, tert.-butyl methacrylate, isocyanatoethyl methacrylate, meta-isopropenyl- α,α -dimethyl isocyanate (TMI), ω -sulfoxyalkyl methacrylates and alkali salts thereof.

22.(previously presented) Free radical emulsion polymerization method according to claim 13, wherein said monomers are selected from the group consisting of styrene derivatives, methacrylates, acrylates, methacrylamides, acrylamides, maleimides, vinyl ethers and vinyl esters.

23.(previously presented) Free radical emulsion polymerization method according to claim 22, wherein said derivatives are selected from the group consisting of para-methylstyrene, tert.-butylstyrene, methylmethacrylate, ethylmethacrylate, butylmethacrylate, glycidylmethacrylate, hydroxyethylmethacrylate, α -methylstyrene, ethylacrylate, butylacrylate, vinylacetate, vinyl versatate, butadiene, isoprene, acrylonitrile, methacrylonitrile, sulfoethyl methacrylate and its alkali salts, acrylic acid, methacrylic acid, tert-butyl acrylamide, AMPS, N-isopropylacrylamide, itaconic acid,

maleic acid, maleic anhydride, vinylidene chloride, isopropylmethacrylate, dialkyl itaconate, acrylonitrile, methacrylonitrile and vinyl chloride.

24.(canceled)

25.(previously presented) Free radical emulsion polymerization method according to claim 16, wherein said anionic surfactants are selected from the group consisting of fatty alcohol sulphates, alkylphenol sulphates, fatty alcohol ether sulphates, fatty alcohol ether sulphates, alkylphenol ether sulphates, alkylbenzene sulphonic acid, alkyl ether carboxylic acid and salts thereof, alkyl sulphosuccinates, alkyl sulphosuccinamates, phosphate esters or α -olefin sulphonates.

26.(previously presented) Free radical emulsion polymerization method for forming latex particles of a monomer or monomer mixture in a water-based reaction in the presence of a chain transfer agent and of a surfactant, wherein said surfactant is present in a concentration below twice its critical micelle concentration of at least 0.05%, by weight, versus said monomer and that said chain transfer agent is a cobalt complex.

27.(canceled)

28.(canceled)

29.(canceled)

30.(previously presented) Free radical emulsion polymerization method according to claim 26, wherein said anionic surfactants are selected from the group consisting of fatty alcohol sulphates, alkylphenol sulphates, fatty alcohol ether sulphates, fatty alcohol ether sulphates, alkylphenol ether sulphates, alkylbenzene sulphonic acid, alkyl ether carboxylic acid and salts thereof, alkyl sulphosuccinates, alkyl sulphosuccinamates, phosphate esters or α -olefin sulphonates.

31.(previously presented) Free radical emulsion polymerization method according to claim 26, wherein said surfactant is an anionic surfactant, present in a concentration versus said monomer or monomer mixture of from 0.05 up to 1%, by weight.

32.(previously presented) Free radical emulsion polymerization method according to claim 26, wherein said monomers are selected from the group consisting of styrene derivatives, methacrylates, acrylates, methacrylamides, acrylamides, maleimides, vinyl ethers and vinyl esters.

33.(previously presented) Free radical emulsion polymerization method according to claim 32, wherein said derivatives are selected from the group consisting of para-methylstyrene, tert.-butylstyrene, methylmethacrylate, ethylmethacrylate, butylmethacrylate, glycidylmethacrylate, hydroxyethylmethacrylate, α -methylstyrene, ethylacrylate, butylacrylate, vinylacetate, vinyl versatate, butadiene, isoprene, acrylonitrile, methacrylonitrile, sulfoethyl methacrylate and its alkali salts, acrylic acid, methacrylic acid, tert-butyl acrylamide, AMPS, N-isopropylacrylamide, itaconic acid,

maleic acid, maleic anhydride, vinylidene chloride, isopropylmethacrylate, dialkyl itaconate, acrylonitrile, methacrylonitrile and vinyl chloride.

34.(previously presented) Free radical emulsion polymerization method according to claim 26, wherein said cobalt complex is a cobalt II or cobalt III complex.

35.(previously presented) Free radical emulsion polymerization method according to claim 34, wherein said cobalt complex is selected from cobalt II diphenyl complex; bis(borondifluorodiphenylglyoximate) cobaltate II complex; bis(borondifluorodimethylglyoximate) cobaltate II complex; [bis[m-(2,3-butanedione dioximato)(2-)O,O'tetraflorodiborato(2-propyl)N,N',N'',N'''](2-propyl)Co(III)]] or benzylbis(dimethylglyximato)(pyridine)cobalt III.